REMARKS/ARGUMENTS

Claims 6-25 are pending. These claims track and find support in original Claims 1-5 and incorporate claim language discussed with Examiner Helmer. Claim 6 finds support in original Claim1. The term "auxin analogue" used in Claim 6 also finds support in original Claim 1 and on page 6, first paragraph. Auxin-like compounds, including naphthaleneacetic acid (NAA), are well-known in the art. Support for Claims 7-20 is also found in the original disclosure as follows: Claims 7-11 (Claim 2 and page 6, first paragraph), Claims 12-15 (Claims 2-5), Claims 16-18 (page 5, last paragraph), Claim 19 (page 8, line 9), Claims 20-22 (page 1, lines 5-7 from bottom), Claims 23-24 (pages 13 and 22, Examples 1 and 2), and Claim 25 (Claim 5). Accordingly, the Applicants do not believe that any new matter has been introduced.

The Applicants thank Examiner Helmer for the courteous and helpful interview of February 11, 2005. The Applicants were encouraged to further clarity the claim language, for example, the term "analogue". The method of the present invention which involves selection using a medium containing an auxin precursor was reviewed, including the higher efficiencies of such a method compared to conventional methods as shown in the Examples. To address the prior art rejections it was suggested that the Applicants further clarify the claim language and point out that the prior art methods do not involve the use of a medium containing an auxin precursor.

Rejection - 35 U.S.C. §112, second paragraph

Claims 1-5 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. These rejections are moot in view of the cancellation of these claims. The Applicants respectfully submit that the following terms would not be indefinite to one of skill in the art in light of the specification.

The term "gene" refers to a segment of DNA that is involved in producing a polypeptide chain, which may optionally include regions preceding and following the coding DNA as well as introns between the exons.

The term "auxin precursor and/or analogue" is described in the specification on page 6, lines 3-7. An auxin precursor is a substance that is converted into an auxin or into a substance having physiological activity similar to that of an auxin, e.g., the auxin precursor indoleacetamide is converted to the auxin indoleacetic acid (IAA). Similarly an analogue of an auxin precursor is a substance that may be converted into an auxin or a substance with auxin-like activity, e.g., the auxin precursor analogue naphthaleneacetic acid amide (NAM) may be converted to the synthetic auxin NAA.

Rejection - 35 U.S.C. §102

Claims 1-4 were rejected under 35 U.S.C. §102(a) as being anticipated by Endo et al., Plant Cell Reports, Volume 20:923-928. This rejection is moot in view of the cancellation of these claims. It would not apply to the new claims for the following reasons:

Endo et al. do not disclose a selection method that incorporates an auxin precursor into the culture medium. When an auxin synthesis gene is used as a selectable marker gene in combination with a culture medium supplemented with an auxin precursor, then auxin is only produced in the desired gene introduced cell in response to the concentration of the auxin precursor in the medium. In this way the amount of auxin in the cell can be controlled by controlling the amount of the auxin precursor medium. On the other hand, when both the auxin precursor and auxin production gene are present in the same construct it is not easy to control the cytokinin/auxin ratio and thus the ability to control the efficacy of the selection method is adversely affected.

As disclosed on page 11 of the specification, the vector constructs of the present invention (which do not include all the genes in the auxin production pathway) result in better control over the redifferentiation of transformed plant cells when used in conjunction with a medium containing an auxin precursor. Accordingly, the Applicants respectfully submit that this rejection would not apply to the present claims.

Rejection - 35 U.S.C. §103

Claims 1-5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Endo et al., Plant Cell Reports 20:923-928. This rejection is moot in view of the cancellation of Claims 1-5 and would not apply to the new claims for the following reasons.

Endo et al. do not suggest or provide a reasonable expectation of success for the method or for the vector of the present invention. The method of the present invention permits the control of the amount of auxin produced by the transformed cells by controlling the amount of the auxin precursor in the culture medium. On the other hand, in the Endo method does not, because the transformed cells contain both the *iaaH* and *iaaM* genes and produce auxin independently of the culture medium. There is no suggestion in Endo for the selection method of the present invention which permits control of the amount of auxin produced by the transformed cells. Control of auxin production is important for improving the selection efficiency, for example, by reducing "escape" phenomena where a transformed cell produces auxin which diffuses to nearby untransformed (non-gene introduced) cells and causes them to express the same phenotype as transformed cells, see the specification, page 2, last paragraph. The Examples and Comparative Examples in the specification show the improved selection efficiency provided by using a method where an auxin precursor in present in the selection medium. For example, as shown in Tables 1 and 2 on pages 17 and 19 of the specification, a significantly higher selection frequency was obtained by culturing

transformants in the presence of 1 or 10 μM of the auxin precursor NAM (38.1% and 50.0%) as compared to transformants selected in a medium containing corresponding concentrations of the auxin NAA (22.2% and 7.7%).

With respect to Claim 25 (vector), unlike the vector of Endo, the vector constructs of the present invention (which do not include all the genes in the auxin production pathway) result in better control over the redifferentiation of transformed plant cells when used in conjunction with a medium containing an auxin precursor, see page 11 of the specification. The Endo vector comprises both the *iaaM/H* genes in combination with an *ipt* gene. Endo does not supply any motivation for removing the *iaaM* gene from the vector and teaches away from this. Endo, page 923, first column, indicates that the combination of the *ipt* gene and the *iaaM/H* genes can result in the production of both auxin and cytokinin. However, deletion of the *iaaM* gene would prevent the conversion of tryptophan to indoleacetamide and thus be ineffective for producing the auxin required by the Endo method. Since there is no suggestion to add an auxin precursor to the medium in Endo, this reference teaches away from deleting the *iaaM* gene because in the absence of the auxin precursor, the use of a vector without the *iaaM* gene would be ineffective for supplying auxin and cytokinin required by the Endo method. Moreover, there is no reasonable expectation of achieving the benefits of modulating the cytokinin/auxin ratio in the plant hormone gene introduced cell by using such a vector in Endo. Accordingly, the Applicants respectfully submit that this rejection would not apply to the present claims.

CONCLUSION

In view of the above amendments and remarks, the Applicants respectfully submit that this application is now in condition for allowance. Early notification to that effect is earnestly solicited.

Respectfully submitted,

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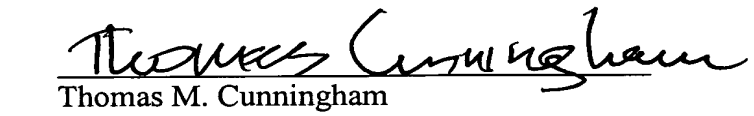

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